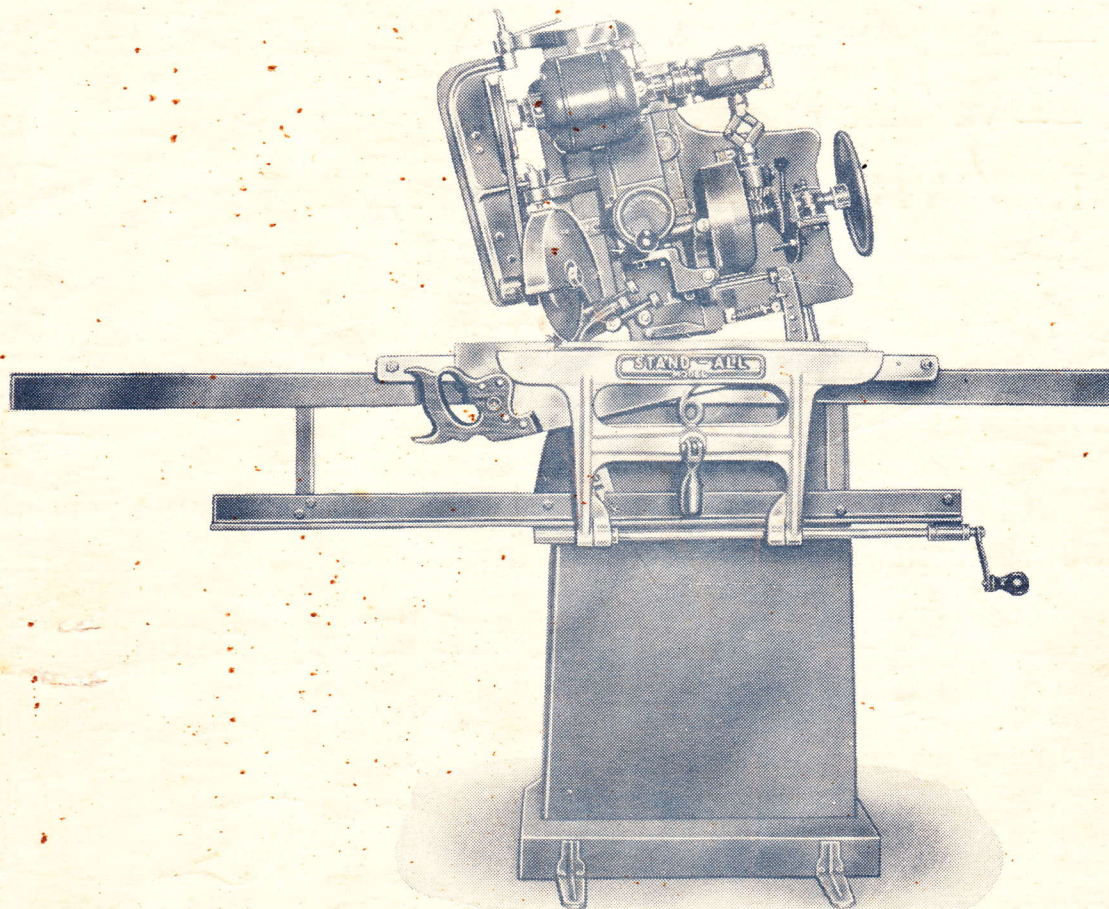


We Proudly Present the

STAND - ALL

Model 6



"A SHOP IN ITSELF"

SIX REASONS WHY

RETOOTHES and SHARPENS

- | | |
|-----------------|------------------------|
| 1. Mitre Saws | 4. Nail Saws |
| 2. Compass Saws | 5. Hand cross-cut Saws |
| 3. Hack Saws | 6. Hand rip Saws |

MANUFACTURERS OF

STANDAL



Inc.

N. 902 NORMANDIE, SPOKANE, WASH.

BROADWAY 0665

*We invite you to compare and check these features
of the **STAND-ALL** Model 6*

CROWN — will replace or put in any standard crown.

FEED — sharpens either by index bar or tooth feed.

HOOK — variable hook adjustment.

GRINDING WHEEL — uses $\frac{1}{16}$ " wheel that grinds down the face and up the back of the tooth.

FULLY AUTOMATIC — grinding wheel oscillates and completes grinding of teeth on both sides without any adjustment.

DRESSING WHEEL — uses thin grinding wheel that does not require excessive dressing to keep desired form.

ADJUSTMENT — positive and simple adjustment from rip to cut-off saw.

AND AT LAST !!

A TOOTH SHAPER that will give any shape of tooth desired - low flat teeth or high pointed teeth. Think how valuable this is especially with small tooth saws where it is so desirable to have high pointed teeth.

For Information regarding price and delivery please write to:

STANDAL Inc., N. 902 Normandie, SPOKANE, WASHINGTON or our Sales Representative.

OPERATING & MAINTENANCE MANUAL

The

STAND-ALL Model 6

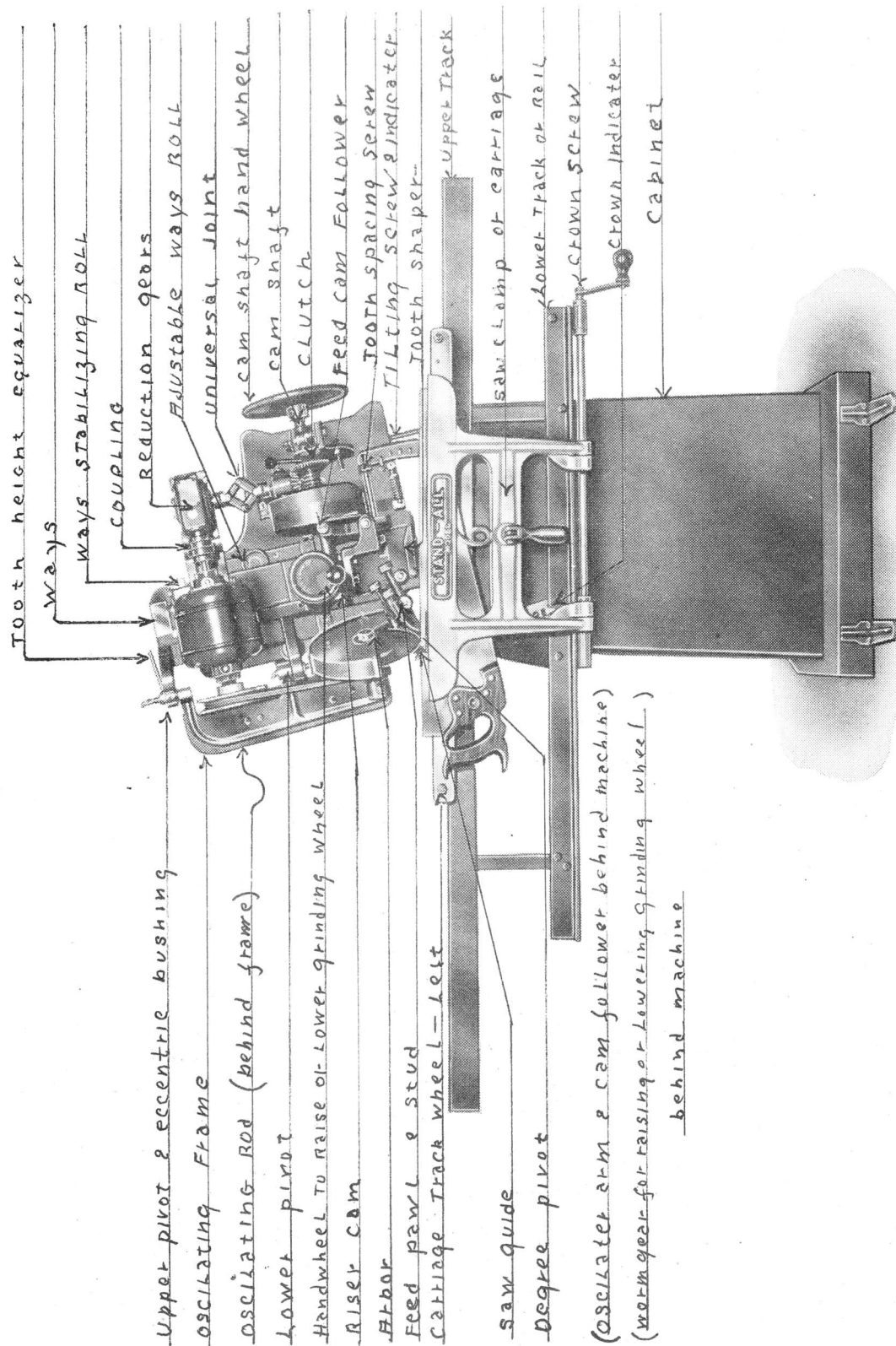
Automatic Handsaw & Bandsaw Grinder

Foreward

The STAND-ALL Model 6 is the result of over twenty years of research, engineering, and practical experimenting to provide you with the finest grinding tools on the market at the lowest possible cost. This product as well as all the other products of Standal Inc. are manufactured with highest quality materials and finest workmanship. By using normal care in the operation and maintenance of your Model 6 it will be a real profit maker for many years.

We invite you to write to us regarding any problems that arise in connection with the successful operation of your machine. As a general rule we request that you send a sample of a saw giving all possible data on the method and adjustments used. We respectfully call your attention to the fact that just as with a lathe or any precision machine your Model 6 is dependent on its operator to give the best results.

We would appreciate your criticism as to the clearness and completeness of the following instructions. We would like to provide the owners of our machines with the best instructional material possible. We feel that we can do this better with your help. As we make changes and improvements in these instructions, we will send you the changes so that it can be incorporated in your instruction manual.



TOOTH HEIGHT EQUALIZER

WAYS

WAYS STABILIZING ROLL

COUPLING

REDUCTION GEARS

ADJUSTABLE WAYS ROLL

UNIVERSAL JOINT

CAM SHAFT HAND WHEEL

CAM SHAFT

CLUTCH

FEED CAM FOLLOWER

TOOTH SPACING SCREW

TILTING SCREW & INDICATOR

TOOTH SHAPER

UPPER TRACK

SAW CLAMP OR CARRIAGE

LOWER TRACK OR RAIL

DOWN SCREW

CROWN INDICATOR

CABINET

UPPER PIVOT & ECCENTRIC BUSHING

OSCILLATING FRAME

OSCILLATING ROD (BEHIND FRAME)

LOWER PIVOT

HANDWHEEL TO RAISE OR LOWER GRINDING WHEEL

RISEY CAM

FEED PAWL & STUD

CARRIAGE TRACK WHEEL - LEFT

SAW GUIDE

DEGREE PIVOT

(OSCILLATOR ARM & CAM FOLLOWER BEHIND MACHINE)

(WORM GEAR FOR RAISING OR LOWERING GRINDING WHEEL)

BEHIND MACHINE

Part I.

Parts List.

STAND-ALL Model 6.

Item No.	Part Description	Part No.	No. Per Machine	Weight each	List Price
	Base, table & main frame assembly	6A	1		
1.	Base (1)	6A127	1		
2.	Brake	6A337	1		
3.	Brake pad	6A332	1		
4.	Feed stop	6A338	1		
5.	Feet (1)	6A118	2		
6.	Main frame	6A100	1		
7.	Riser way main bearings	6A203	3		
8.	Riser way stabilizer bearing (2)	6A202	1		
9.	Riser way bearing axle top	6A374	1		
10.	Riser way bearing axle bottom	6A375	1		
11.	Riser wheels	6A390	3		
12.	Riser way wheel eccentric shaft	6A370	1		
13.	Saw guide	6A351	1		
14.	Saw guide spring	6A352	1		
15.	Table	6A103	1		
16.	Tilting indicator (3)	6A327	1		
17.	Tilting indicator pointer (3)	6A328	1		
18.	Tilting pivots	6A329	2		
19.	Tilting pivots jam nuts	6A330	2		
20.	Tilting screw (3)	6A338	1		
21.	Wheel, tilting screw (3)	6A228	1		
22.	Tilting ratchet assembly				
	Riser ways & arm assembly	6B	1		
23.	Elevating hand wheel	6B115	1		
24.	Elevating screw-vertical	6B311	1		
25.	Elevating screw holder	6B123	1		
26.	Elevating screw set collar 5/8"	6B344	2		
27.	Elevating shaft	6B312	1		
28.	Elevating shaft set collar 1/2"	6B345	2		
29.	Elevating wheel knob	6B223	1		
30.	Elevating worm & gear	6B205	1 pr		
31.	Grommet, electric cord	6B224	1		
32.	Identification plate	6B230	1		
33.	Riser cam follower arm	6B105	1		
34.	Riser cam follower arm backplate	6B106	1		
35.	Riser cam follower bearing	6B203	1		
36.	Riser cam follower bearing shaft	6B369	1		
37.	Riser ways & oscillating arms	6B102	1		

Item No.	Part Description	Part No.	No. Per Machine	Weight each	List Price
Power assembly		6C	1		
38.	Clutch bevel gear Lis2B-18T	6C206	1		
39.	Clutch bevel gear bracket	6C117	1		
40.	Motor 1/3 Hp. (3)	6C207-3	1		
41.	Motor 1/2 Hp. (4)	6C207-2	1		
42.	Motor belt	6C210	1		
43.	Motor reduction unit coupling	6C208	1		
44.	Motor pulley	6C209	1		
45.	Motor switch	6C227	1		
46.	Reduction unit	6C211	1		
47.	Reduction unit mounting	6C104	1		
48.	Universal joint	6C214	1		
49.	Universal joint bearing	6C200	1		
Camshaft assembly		6D	1		
50.	Camshaft	6D314	1		
51.	Camshaft bearings split	6D204	2		
52.	Camshaft bearing-grease cup	6D212	2		
53.	Camshaft grease cup extension	6D221	1		
54.	Camshaft grease cup extension elbow	6D222	1		
55.	Camshaft set collar 7/8"	6D371	1		
56.	Clutch	6D126	1 pr		
57.	Clutch lever	6D381	1		
58.	Clutch lever knob	6D382	1		
59.	Clutch lever stop	6D383	1		
60.	Clutch ring gear 36T	6D206	1		
61.	Clutch return spring	6D219	1		
62.	Clutch ring gear hub	6D313	1		
63.	Feed & oscillating cam	6D111	1		
64.	Hand wheel	6D114	1		
65.	Riser cam	6D107	1		
66.	Riser cam spacer	6D347	1		
Oscillating head & grinding arbor assembly		6E	1		
67.	Arbor	6E108	1		
68.	Arbor allignment lever	6E304	1		
69.	Arbor bearing	6E201	1		
70.	Arbor flange	6E110	1		
71.	Arbor flange jam nut	6E216	1		
72.	Arbor holder	6E109	1		
73.	Arbor holder bottom pivot	6E305	1		
74.	Arbor holder bottom pivot cup	6E306	1		
75.	Arbor holder bottom pivot lock nut	6E307	1		
76.	Arbor holder oil cup	6E213	2		
77.	Arbor holder top oscillating pivot	6E301	1		
78.	Arbor holder top pivot cup	6E302	1		
79.	Arbor holder top pivot eccentric bushing	6E303	1		
80.	Arbor nut wrench	6E229	1		
81.	Grinding wheel guard	6E120	1		
82.	Grinding wheel guard corar	6E121	1		
83.	Oscillating arm	6E309	1		
84.	Oscillating arm anchor	6E310	1		

Item No.	Part Description	Part No.	No. Per Machine	Weight each	List Price
Oscillating head & grinding arbor assembly, Con't.		6E	1		
85.	Oscillating arm ball joint	6E215	1		
86.	Oscillating L bracket	6E377	1		
87.	Oscillating rod	6E373	1		
88.	Oscillating rod holder	6E384	1		
89.	Oscillating rod pivot	6E376	1		
90.	Oscillating rod pivots	6E378	2		
91.	Oscillating spring	6E220	1		
Feed assembly		6F	1		
92.	Feed arm mounting bracket pivot (short)	6F321	1		
93.	Feed arm mounting bracket pivot (long)	6F322	1		
94.	Feed arm mounting bracket pivot nuts	6F323	2		
95.	Feed carriage	6F317	1		
96.	Feed carriage spring	6F234	1		
97.	Feed follower arm	6F124	1		
98.	Feed follower arm bearing	6F202	1		
99.	Feed follower arm bracket	6F125	1		
100.	Feed pawl	6F372	1		
101.	Feed pawl springs	6F235	3		
102.	Feed pawl knobs	6F239	3		
103.	Feed pawl stud	6F331	1		
104.	Feed spring anchor	6F324	1		
105.	Feed spring anchor stud	6F325	1		
106.	Feed spring anchor stud lockout	6F326	1		
107.	Feed spring anchor set collar	6F345	1		
108.	Feed stop screw spring	6F346	1		
109.	Feed stop screw	6F336	1		
110.	Feed stop screw knob	6F240	1		
111.	Flat feed springs	6F315	2		
112.	Flat feed spring anchors	6F316	2		
113.	Spacer gauges (a) 5-6, 7-8, 9-10, 11-12.	6F387	1 set		
114.	Tooth angle adjustment	6F319	1		
115.	Main feed compression spring	6F217	1		
Track assembly		6G	1		
116.	Crowning pointer	6G391	1		
117.	Crowning screw	6G364	1		
118.	Crowning screw handle	6G365	1		
119.	Crowning screw handle knob	6G223	1		
120.	Crowning screw set collars	6G344	2		
121.	Crowning screw bearing L.H. $\frac{1}{2}$ "	6G361	1		
122.	Crowning screw bearing center	6G363	1		
123.	Crowning screw bearing, RH	6G363	1		
124.	Crowning screw nut	6G362	1		
125.	Crown tension spring	6G233	1		
126.	Lower track	6G356	1		
127.	Track support, center front	6G358	1		

Item No.	Part Description	Part No.	No. Per Machine	Weight each	List Price
	Track Assembly, con't.	6G	1		
128.	Track support, left hand	6G359	1		
129.	Track support, rear center	6G360	1		
130.	Track support, right hand	6G357	1		
131.	Track pivot	6G379	1		
132.	Upper track	6G355	2		
133.	Upper track brace	6G367	1		
	Vice Assembly (5)	6H	1		
134.	Height stop	6H385	1		
135.	Height stop backing	6H386	2		
136.	Rack bars 7-8) 9-10) 11-12)	6H350	set		
137.	Rack bar anchor	6H348	1		
138.	Rack bar guide	6H392	1		
139.	Rack bar lock	6H349	1		
140.	Vice handle	6H116	1		
141.	Vice hinge	6H340	1		
142.	Vice front section	6H112	1		
143.	Vice rear section	6H113	1		
144.	Vice roller guide	6H343	4		
145.	Vice roller stud	6H342	2		
146.	Vice roller stud bearing	6H202	2		
147.	Vice screw	6H341	1		
148.	Vice screw washer	6H380	1		
149.	Vice spring	6H232	1		

NOTES:

- (1) Optional equipment at extra cost.
- (2) Not standard equipment on serial numbers below 6-140.
- (3) All machines with serial numbers 6-161 and higher will be equipped with quick tilting ratchet mechanism.
- (4) Optional at extra cost.
- (5) Optional assemblies can be purchased if desired to increase productive time of machine.

Part II.

A. Setting the machine up to operate.

1. The machine will come to you crated, blocked and coated with protective lubricant. The following parts will be found in the crate detached from the machine:

4-bars with 8 racks, ~~5-6 point~~, 7-8 point, 9-10, point 11-12 point.

4-spacer gauges for the rack bars above.

1-rack feed pawl.

1-tooth feed pawl.

Motor warranty.

Instructions for speed reduction unit.

1-spring for saw guide (subject to change).

1-Arbor nut wrench.

2. The head (6-102) will be bolted solid to the main casting (6-101) to insure against movement in transit. The bolts to be removed are painted red and tagged for easy identification.

3. Wherever possible uncrate the machine after moving it to its permanent location in your shop. In any case do not attempt to move the machine by lifting on the tracks or any other movable part as it may cause misalignment, use lower guide rail for lifting.

4. After uncrating, clean the machine very thoroughly as grit and dirt may have collected in transit on machined surfaces.

B. Lubrication: The following points require proper lubrication.

1. Two grease cups or fittings on the camshaft (Part No.6)

2. Two oil cups on the oscillating arms and grinding arbor holder.

3. Oil holes in set collars housing the raising wheel shaft.

4. The clutch ring and pinion gear.

5. The oscillating and feed cam brake lining.

6. The reduction unit as specified in special instructions.

We recommend Keystone #2 Lube oil.

7. Motor as specified in instructions.

8. All other moving parts are mounted on sealed bearings and should be kept free of oil, grease and grit.

Part III.

OPERATION.

A. GENERAL INFORMATION:

1. Your Model 6 is designed: first, to give you volume production of the highest quality; second, to enable you to get this production at the lowest labor and material cost per saw. Therefore, operation has been simplified to the highest degree possible. We actually have cases where men having no previous saw repair experience have mastered the machine in a few hours. You can anticipate within a reasonably short time doing your saw repair work at gross profit of 85%. This percentage is based on a rate of \$1.50 per hour for the operator; grinding 50 saws with one \$1.70 grinding wheel; electricity at average cost per KWH and charging \$1.00 to sharpen an average saw.

2. We sincerely ask that you study our instructions carefully and follow them closely until you have completely mastered the machine. These instructions have been prepared by the inventor who has spent a lifetime analyzing the problems every repair saw shop is faced with. We know that after you have done this you may be able to suggest improvements which we will appreciate having.

3. Listed below are high lights which it would be well to have in mind when studying the step by step operating instructions.

- a. At all times be sure that wheel is grinding on tooth faces on down stroke.
- b. Small Hand Wheel raises or lowers grinding wheel to desired position.
- c. Way Roller on right hand side of ways has an eccentric screw for loosening or tightening ways. Loosen jam nut at back of machine, turn slotted head screw on front side until rollers are snug, then tighten jam nut; ways must be free enough to be raised by hand. The smaller the teeth on cut-off saws the higher the tooth shaper should be placed in notches.
- d. Handle on clutch engages or disengages cam motion.
- e. Hand Wheel is for manual movement of machine for close setting.

- f. Degree quadrant gives reading in degrees of hook by using hand wheel screw, and adjusting for proper reading.
- g. Small Hand Wheel raises or lowers grinding wheel to desired position.
- h. Way Roller on right hand side of ways has an eccentric screw for loosening or tightening ways. Loosed jam nut at back of machine, turn slotted head screw on front side until rollers are snug, then tighten jam nut; ways must be free enough to be raised by hand.
- i. Camshaft must not have any end play; adjust by tightening of jam nuts on end of cam shaft.
- j. Brake on large cam drum should be just tight enough to stop cams from being jerky and oiled.
- k. Tapered pins in tilting ears allow for adjustment. Move handle away from operator or toward operator for centering grinding wheel properly for equal tooth height on each side of saw.
- l. Humps on back of teeth are from; slow timing on feed; loose tapered pins on head; end play in camshaft; way rollers not being tight enough or accumulation of grit in path of way rolls.

Part III.

B.

A. SHARPENING BY RACK FEED.

1. Rack feed retoothing and sharpening set up:
Turn crown adjusting screw till crown scale reads 6. 6 is a good standard crown to retooth all saws to unless otherwise specified. Machine is now set for crown. If the same crown is always used it simplifies sharpening repeat saws.
2. Turn tilting screw till scale on degree quadrant reads 12. This is found to be best all around setting. Machine is now set for hook.
3. Turn large hand wheel (in direction of arrow) until feed cam follower is about center of highest part of feed cam, or opposite brass button. Insert spacer gauge (with markings on gauge corresponding to tooth point desired) between spacer gauge block and end of tooth spacer screw, turn screw either in or out until gauge fits snug between block and screw. The machine is now set for selected tooth space.
4. Select rack bars to correspond with spacer gauge used, for instance if an 8 point saw is to be retouched or sharpened select an 8 spacer and 8 rack bar. Fasten rack bar in place at back of carriage by loosening cap screw at right hand end of carriage, slide slotted end of bar over screw, see that bar rests firmly in notches at center and other end of carriage, then tighten cap screw to hold bar in place. Machine is now set for rack feed.
5. Mounting saw in carriage.
Move carriage to extreme left hand end of track. Clamp height stop on face of saw with single pin on height gauge toward toe end of saw. The pin on lower end of height gauge is for the purpose of engaging the stop in the same relation each time, the pin drops in a hole on front jaw of saw clamp bored thru for that purpose. Some operators find it best to clamp the height stop on face of saw after the saw has been placed in clamp, the reason is that the saw then can be placed so that the handle is up against end of vise, and will

always be in same relation to grinding wheel as when taken out of clamp, for instance, taking saw out of clamp after first roughing cut to set, then reclamping for finish pass, the wheel and tooth will be lined up making it unnecessary to correlate pawl. Saw is now in position. New model height stop will have tail piece for instant allignment of saw.

6. Sharpening:

If the saw has once been sharpened on the machine or if tooth space matches rack bar, commence by first turning large hand wheel in direction of arrow until grinding wheel is elevated to its highest position on riser cam, edge of wheel must be high enough to clear saw. If the height of cam does not raise the grinding wheel high enough to clear saw, raise wheel by turning elevating hand wheel clockwise until it clears the saw. This elevating wheel raises or lowers the grinding wheel about .004 inch to a complete turn. When wheel is raised high enough, slide carriage with saw clamped to the right hand side of machine with the first tooth in line with the wheel; then again turn large hand wheel lowering the wheel in position for grinding. Note that while lowering the grinding wheel it must be at the oscillated position to conform with the bevel of the tooth. Correlate grinding wheel with the tooth by turning feed pawl screw in or out until the wheel is grinding down the proper bevelled face and up the back of tooth. Then with the motor turned on and the clutch disengaged by turning the large hand wheel you find the machine lined up to proper grinding position; engage clutch and complete sharpening.

7. Retoolthing:

First grind all teeth off saw by mounting saw as in paragraph 5. Disengage clutch, then mount a 8" x $\frac{1}{4}$ " grinding wheel on arbor in place of the 8" x $\frac{1}{16}$ " wheel. With motor turned on lower the wheel and pass saw back and forth by hand until all teeth are cleaned off. Instead of using the elevating hand wheel it is much quicker to lower the grinding wheel for this purpose by lowering the grinding wheel with the large hand wheel. This saves cranking wheel up and down. Saw is now a blank and should be reclamped using height stop. All saws for the day that are to be retooled should have the teeth ground off while heavy wheel is mounted on arbor; this saves time in changing wheels. Chalk mark each saw for tooth size as a record so you will know what to retool it to. Hone the burr from back side of saw.

8. Settings:

Setting may be done by hand while saw is in clamp or saw may be removed from clamp for setting then reclamped as in paragraph 5. Before setting a saw that has been retooled, run a flat file or hone along the back side of saw to remove any burr.

Part III.

C.

C. SHARPENING BY TOOTH FEED:

1. Receiving saw from customer.

First make out a ticket.

Mark saw near handle, ticket number, then point number, then crown gauge the saw and mark.

EXAMPLE

1476-8P-6C

This saves time when commencing to sharpen.

2. 8 point and larger use C notch on tooth shaper.
9 point and smaller use one notch above C.
Change tooth shaper position by turning large hand wheel till follower is on highest part of feed cam.
Pry open, by pulling the feed stud away from notches then shift pointer of tooth shaper into proper notch.
3. Select saw, clamp it in vise, turn crown handle until indicator shows number on scale.
4. Move large hand wheel till feed pawl follower is on highest part of cam.
5. Make tooth spacer adjustment.
6. Move the saw and clamp in position so that grinding wheel can be lowered to bottom of first tooth.
7. With grinding wheel in motion and at its lowest part of travel, adjust feed pawl so that it just starts to push as the grinding wheel begins to rise. This setting of first tooth should be done manually, so that the wheel is grinding heavy on face, deep enough and light on the back. Check to see that follower pawl is screwed up and out of the way.
8. Now engage clutch.
9. Get this setting correct at the start for if any adjustment is made part way down the saw it may cause some difficulty getting even tooth space.
10. The follow pawl should be adjusted when sharpening has progressed toward toe of saw. This may be done while machine is in motion by gradually lowering the follow pawl until it

is in a throat of a tooth, then correlate until it just touches face of tooth, then screw knob till pawl rides just above teeth--or machine may be stopped to do this.

11. When feed pawl drops over end of saw, follow pawl automatically falls in place to carry saw on to completion.
12. Do not allow follow pawl to do any feeding, except, the last few teeth on saw after feed pawl drops away, or, it may be lowered to carry over a missing tooth, then raised out of the way again. Follow pawl should ride about 1/32 inch above teeth while following. To properly adjust feed pawl it should push on a tooth of same sequence as being ground.
13. If the grinding wheel is going down the face of a tooth that the bevel facing you, then the feed pawl should push on a tooth with the bevel facing you.
14. Be sure to always grind on tooth faces, otherwise big and little teeth will result. The faces of teeth is what determine the spacing.
15. If a saw has big and little teeth, grind heavy on the faces of the big tooth then feed pawl should push on face of big tooth. 9 point saw and larger; feed pawl should push on the tooth next in line and same side of saw.
16. 10 points and smaller; in order to give more room for pawl to feed, drop back one tooth in sequence farther, otherwise you may grind off the end of the feed pawl.
17. On a saw that has been very irregularly hand filed, the first pass of grinding should just even up tooth faces, then one or two finish passes may be required.
18. Ordinarily no adjustment of centering device is necessary when tooth feeding; it regulated itself by the action of tooth feeding.

Note: There is no economy in speed by trying to tooth feed a saw that has uneven crown and tooth space, its quicker to retooth and sharpen from the rack bar ordinarily. The value of tooth feed lies in the fact that a saw in reasonably good condition may be sharpened on this machine without matching the saw to machine, THIS MACHINE CAN BE MATCHED TO THE SAW, thereby saving time and saving the consumer less of saw steel which is required when retooling.

Part IV.

TROUBLE SHOOTING.

1. Tooth reversing and pointing toward handle.
This is caused by cam slipping and allowing feed pawl to feed too fast. To correct: loosen jam nuts at end of cam shaft, also allen set screws, stick the straight end of allen wrench in set screw socket, hold cam by this and move large hand wheel until proper setting of cam is obtained.
2. Throats rounding at the bottom.
Cam set too fast-spacer gauge improperly gauged or grinding wheel worn rounding or wheels on guide ways are loose.
3. Hump back teeth.
Spacer gauge set too loosely or cam retarded too much.
4. Straight back teeth on one side, humped on the other.
If teeth are higher on one side than on the other, adjust with equalizer at top of oscillating frame. If teeth are of equal height, but condition still remains, bottom guide rail of track should be moved in or out until condition is corrected.
5. Galloping.
If camshaft has a galloping movement, or rises and drops suddenly; brake needs adjusting, either it is too loose or too tight or needs oiling; or guide wheels on ways are too tight or too loose or gummed up, or universal joint needs oiling.
6. Spacing unequal on rack feed.
Teeth in rack gummed up; clean by brushing; or rack suspended in air at one end not bearing down equally full length of rack, causing springing of rack when pawl is engaged.
7. Timing.
Feed should start pushing just as wheel begins to rise from bottom of throat, adjust with spacer gauge.
8. Grinding wheels.
Burning-wheel too hard or needs dressing.
Wheels wear too rapidly, wheel may be too soft or dressed at too much of an angle allowing only pointed edge to do all the grinding. Dress wheel to conform to back of teeth for long life. Burning faces of teeth-wheel has become rounding on face side, dress wheel to a corner. Always do dressing of wheel on side that grinds up the back. Always dress a wheel open by a light chopping action. A wheel dressed smooth is inclined to burn.

9. Clutch.
Do not make short movements of machine by engaging or disengaging clutch. Use hand wheel for that purpose.
10. Grit on track or guide rails.
Brush this off occasionally so that carriage can move freely.
11. Looseness.
Check oscillating frame to see that tapered pins are snug. Check guide wheels on ways, they should all roll when head rises and lowers. To take up ways wheels, loosen jam nut at back of single wheel on right hand side of machine, turn screw till wheel is snug then lock. Do not tighten too much or head may stick in the up position, or become jerky in its travel.
12. Carriage travel.
To line up travel of carriage place a saw in clamp. In grinding position depress guide clamp then run carriage back and forth on track, side of saw should just touch inside guide along full length of saw to be correct. Adjust by turning screws in or out that hold wheels riding on rail till sawpasses in correct allignment.
13. Centering.
Should the grinding wheel not oscillate over center of saw within the limits of eccentric wheel centering devise, adjust by loosening jam nuts on tapered pins of degree tilt, then turn screws in or out till wheel centers properly then lock pins after they are snug. This is only for lining up machine. High or low teeth after this are adjusted by adjusting lever at top of oscillating head wheel centering devise. If the teeth of saw next to operator are high pull adjusting lever toward that side till teeth are of equal height or vice versa.
14. Grinding.
Always have wheel grinding on the faces of teeth otherwise unequal spacing will result. Cutting the faces is what determines the spacing. For each new pass of saw, back the correlator screw slightly. This will insure cutting on faces and making a sharp gullet if wheel is dressed sharp--Rack feed only.
15. Teeth.
Teeth high on one side at heel and high on opposite side at toe of saw. Adjust tracks and lower guide rails so they are parallel. Adjust carriage wheels so that the saw passes evenly thru guides without bending saw while entering or leaving.
16. Hook.
More or less hook may be had by screwing hand wheel at back and right hand side of machine marked tilting screw till desired hook is attained. 12 degrees has been found

the best average.

17. Shaper.

High and low tooth shape is made by disengaging tooth shaper then engage in C notch. Highest notch makes highest teeth lower notch marked R makes lower flat teeth as for rip, power hack saw blades etc.

18. Rip saws.

Lower tilt of machine to zero, remove screw holding oscillating arm from follower member, put screw thru hole slotted in plate at top of frame then tighten nut. This stops the oscillation. Change shaper to R notch, adjust tooth spacing and machine is ready for grinding.

19. Spacing.

To change spacing of tooth size, move cam shaft with large hand wheel till follower is at the highest part of feed cam, opposite small brass pin, then select spacer gauge of required point marking, insert this between 1/2" square steel stop block and end of screw, adjust till the gauge is snug but free enough to pull out. The screw is directly below the large cam and has a knurled bronze knob. A slight variation in shape of tooth may be made after spacer setting by slightly adjusting the screw one way or the other till the desired shape is attained, ordinarily two people do not apply the same pressure on screw making this variation. A little practice will tell the proper amount to set screw. Spacer gauge is set for C notch of tooth shaper.

20. Camshaft.

All end play should be kept out of camshaft by loosening allen set screw in riser cam, then loosen jam nut at end of shaft, tighten remaining nut till end play is taken out, then tighten allen screw and jam nut. (see note at bottom of page).

21. Motor.

Motor is A.C. 60 cycle 110 volts.

22. Oil.

Keep machine well oiled and greased.

23. Rack bars.

Each machine when shipped will have a rack bar properly placed for grinding, other bars may replace this one by inserting in the same position. Rack bars must rest firmly in place or teeth of uneven shapes will result. The nut locking the rack bars should be snug but not extra tight. Just loosen nut, slide out bar, slide in another bar and tighten nut, set spacer gauge to match points of bar and it is ready for grinding.

Note.

No's 1, 2, 3, 4, and 7 apply to machines with serial numbers 1 to 25 inclusive. (set screw)

No. 20 does not include machines with serial No's 26 to 37 inclusive. These machines have solid pinned cams and end play will have to be taken up by shimming.

Part V

INSTRUCTIONS for OPERATING

BANDSAW ATTACHMENT on MODEL 6

A. SKIP TOOTH

1. First detach oscillator rod and fasten as for rip handsaws.
2. Adjust quadrant reading to zero on scale. Also set tooth shaper one notch below C.
3. Loosen cap screw that is through slotted hole in saw guide, then swing saw guide back out of the way.
4. Attach bandsaw clamp to track so that notch on front clamp is in line with grinding wheel.
The clamp has a hook at about center on the back side. This hook hooks over the top edge of track.
To the left and back side of clamp is a stud, this stud rests against outside of track.
To the right and back side of clamp is a screw, this screw must be tightened up against front side of track. This will hold vise or clamp in position.
5. Mount bandsaw between jaws of clamp, adjust bottom hand wheel till bandsaw teeth and about 1/8" of the body of band is above jaws.
Teeth point to LEFT as operator faces machine.
Turn front hand wheel till band is held snug but not tight. It must be free enough to move or feed pawl will not push it.
6. Mount a 1/16 or 3/32x8" diameter grinding wheel on arbor. Raise wheel high enough to clear band, then adjust face of tooth to grinding wheel.
Adjust space same as for handsaw but using no spacer gauge. Pawl must come back far enough to clear tooth for next stroke.
7. Lower grinding wheel to bottom of throat.
8. While in this position, lower skip tooth stop screw to block.
9. Start motor---engage clutch.
By now, band should be feeding, side of wheel just touching faces of teeth, and grinding a little at the bottom of throat.
10. Now to get the proper drag along bottom at throat, and rise at back of tooth.
11. Turn handwheel counterclockwise (this is the hand wheel for raising and lowering grinding wheel).
Ordinarily, if you did this the wheel would cut deeper and

deeper into the band, but, paragraph 8 where you made the adjustments on skip tooth stop will not let the machine ride on its full cam, so will maintain the same depth. Keep turning this handwheel counterclockwise and you will see the grinding wheel begin to grind the flat bottom of throat, then raise out of the throat, continue turning hand wheel till the grinding wheel goes straight down on face, follows along bottom of throat then rises up the back of tooth.

12. Pawl should feed up to within one full tooth of grinding wheel.

If it is desired to move more metal from band, do not try to do this by lowering grinding wheel.

Raise band up to grinding wheel by adjusting hand wheel at bottom of vise.

Various shapes of skip tooth may be made merely by turning elevating hand wheel clockwise, or if you want a small tooth and long flat bottom turn hand wheel counterclockwise.

This will not alter the tooth space. Also the height in relation to length of cutting tooth may be varied by moving tooth shaper up or down a few notches. The higher the tooth shaper is placed the higher the tooth will be.

However, the higher the shaper is placed the more limited you will be for length of tooth.

The lowest notch will give the longest feed or largest tooth size.

NARROW BANDSAWS

A. Regular.

1. Set oscillator for hand rip saw, same as skip tooth. Set tooth shaper in R notch-or the lowest notch. Screw skip tooth stop up and away from block. Set tooth spacer so that it gives proper length of stroke for tooth, and the wheel begins to rise, just as the pawl starts to push, correlate feed pawl to proper place for grinding.
Use a grinding wheel $\frac{1}{3}$ the thickness of the length of tooth space.
Feed one full tooth from grinding wheel.
Tooth spacing at joint of band must be equal in length to teeth of band, or cutting off teeth will result.
Should the spacing be unequal at the joint be sure to start and finish grinding at joint.

January 12, 1950

We offer you the following supplementary information regarding the operation of your STAND-ALL Model 6 Grinder. We suggest you add this material to your "Parts and Instruction Book" for convenient reference.

1. DRESSING THE GRINDING WHEEL. Please see separate sheets attached giving instructions and illustrations. We recommend this information as being very important for the most successful operation of your machine.

2. RACK BARS: the machine is equipped with the following standard rack bars: 7, 8, 9, 10, 11, 12 point bars. For grinding 5 and 6 point saws use the :

11 point bar for 6 point saws
9 point bar for 5 point saws

3. $5\frac{1}{2}$ Rip Saws: as this particular saw generally has teeth that gradually diminish in size toward the toe of the saw, it is impractical and uneconomical to sharpen on the machine. We recommend either retoothing these saws to an even point tooth space or filing by hand.

4. HEIGHT STOP GAUGE: due to the fact that there are relatively few short saws, we do not furnish a special height stop gauge as it would only increase the price of the machine. We recommend dropping the handle on short saws so that the standard height stop gauge can be used.

5. CROWN GAUGE: if saws are too short to be gauged, we recommend setting the machine to the crown on the saw by simply sighting down the saw.

6. PROPER USE OF SPACER GAUGES: the length of the feed stroke determines the distance of feed. Regardless of where the tooth shaper pointer is set, if the spacer gauge has been used and set after the pointer is moved, the feed will be correct. However, you CAN NOT set the spacer gauge with the tooth shaper on C then move the tooth shaper up or down and get true length of feed. The tooth shaper pointer must be set first, then the spacer gauge used.

7. WAYS AND WAYS' BEARINGS STICKING OR BINDING: a normal amount of dirt and grit will not cause this trouble. However, if the grinding wheel is worn so small that the universal joint collapses to the point where it can move no further, the head will be tilted out of line. This exerts so much pressure on the ways and ways bearings that it may move the eccentric ways bearing (the single bearing on the right hand side). This will cause the head to be loose and jerky. To correct this simply replace the worn grinding wheel with a new one and adjust the eccentric bearing until the head fits snug but not tight in the ways.

8. CENTERING GUIDE SPRING: this spring should be checked frequently to make certain it is exerting enough pressure on the saw as it is fed thru the machine. Too weak a spring will allow the saw to move faster than it is being fed after the saw reaches the center point of the crown. This may make it difficult to get even teeth and get the same result in successive passes. To correct replace the spring when it looses its tension.

9. RIGHT HAND UPPER TRACK: if your machine is set up on an uneven surface, particularly concret, the track will tend to vibrate. This vibration will be transmitted to the grinding wheel and, of course, affect the finish of the teeth.

10. GRINDING WHEELS: although there are a number of very good grinding wheels on the market, we recommend using the STAND-ALL wheel. It has been very carefully tested to meet the requirements of practically every saw shop. We feel certain, however, that you will agree that there will always be some difficulty in getting exactly the wheel you like the best time after time; and also that differences in operating habits as well as the differences in saws will tend to reflect on the wheel. We do want to assure you that we will constantly try to find improvements and as we do we will make them available to you.

Sincerely yours,
STANDAL Inc.

By: Joel B. Ingebritson
General Manager

DRESSERS.

We have found from practice that using a dresser that scrapes on the wheel face to form or dress it, cuts the tops of the grit off thus making grinding wheel too smooth which causes burning. A dressing brick, although of the scraping type, may be used with fair success if a chopping action is used when dressing so as to open the wheel. In other words, scrape the wheel to proper form then use a few chopping strokes to open it.

Our experience proves that a dresser of the wheel type (one that has a small circular stone that will rotate on an arbor and having a handle attached for holding) does the fastest and best job of dressing. It also dresses the grinding wheel open. The action is just the opposite to a scraper type dresser in that the dressing wheel is held to the grinding wheel in such a way that the dressing wheel rotates with the grinding wheel; this forces the hard pointed grit of the dressing wheel in between grit of grinding wheel opening up the grinding wheel rather than cutting the tops off the grinding wheel grit and dulling their points.

The dressing wheel we use has a $9/12$ " face and $1\frac{1}{2}$ " diameter. The face of the dressing wheel is flat. The way to use it, we find, is to hold the dresser so that the flat face conforms to the angle to be dressed and in direct line rotation of the grinding wheel; hold this position lightly just for a long enough time to allow the dressing wheel to start rotating; then without changing the angle of dresser face to wheel face, slowly turn the handle of dresser until it is about 30 to 40 degrees from the starting position where you caused the dressing wheel to begin rotating; however, do NOT change the angle on the dressing wheel from the original that you used when starting to dress the grinding wheel. (Please see illustrations on separate page showing "starting position" and "finish position"). This dresser is very fast and accurate. By moving the dresser back and forth in line with wheel angle, it is easy to maintain a flat face on the dressing wheel.

If you would like to secure a dresser of this type but are unable to locate one locally, we will be glad to take care of your requirements.

SUGGESTIONS HOW TO DRESS THE GRINDING WHEEL USED ON THE STAND-ALL MODEL 6.

1.

(Please refer to figure 1, on separate page).

No. 1 shows proper shaping of wheel. The left side on tooth face side must be sharp so as to have a shearing action as it goes down the face of tooth. The side of wheel next to tooth face should be flat so that wheel will not be deflected from its straight path downward. This shearing action also minimizes the chance of burning and makes a very smooth and sharp cutting edge on tooth face. Note that the face of wheel is shaped to conform to the angle of the tooth thereby utilizing the full cutting capacity of the wheel.

2.

(Please refer to figure 2, on separate page).

Dressing angle of wheel face at a greater angle than the form of the tooth will cause a humpbacked tooth; this also tends to burn and shorten the life of the grinding wheel because only a few grit at edge of wheel do all the grinding while wheel is grinding up the back of tooth. Also makes deep score marks on the back of tooth.

3.

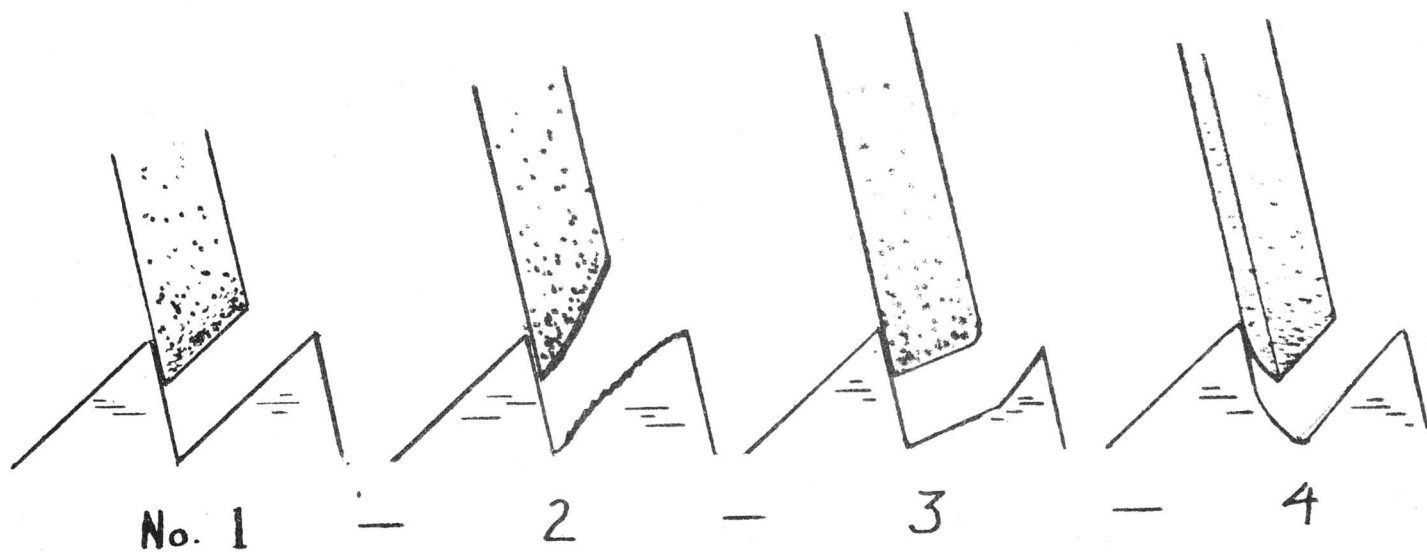
(Please refer to figure 3, on separate page).

Dressing with less bevel than angle of tooth will make a wide gullet and thin spear point tooth. On small teeth like 11 and 12 point it makes a poor looking and weak tooth; too much gullet and teeth too short.

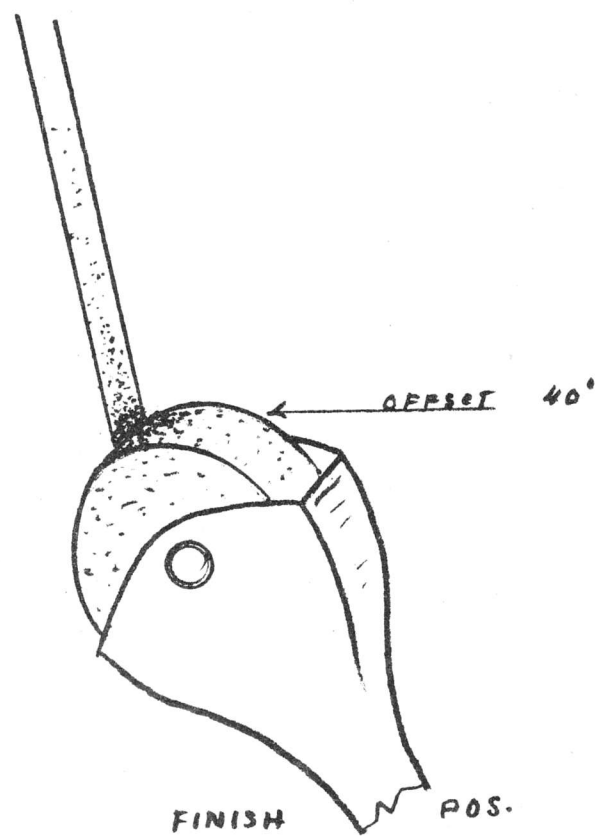
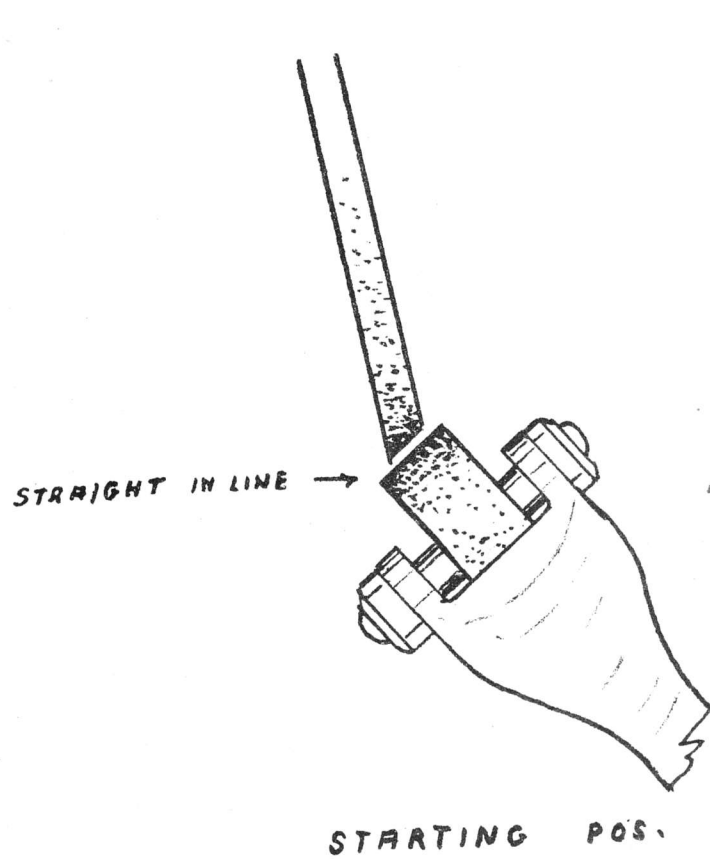
4.

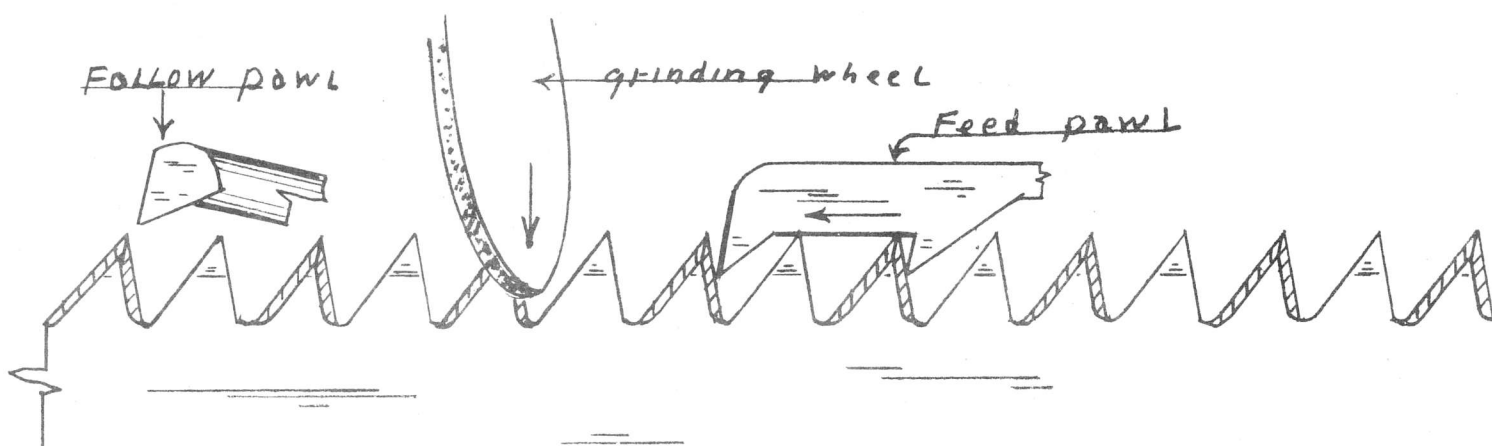
(Please refer to figure 4, on separate page).

No. 4 shows condition of wheel from natural wear when the faces of teeth are ground too heavily. The left side of wheel that grinds down the face of tooth is deflected from its path actually causing the thin wheel to flex and crawl away from tooth face; then when feed starts, it has to overcome this flex without any further grinding occurring; consequently, part of the feed has been used without any grinding up the back of tooth having been done. Thus when pressure on wheel is changed the other way as when grinding up the back of tooth, it allows a sudden feed thereby moving the wheel up the back of tooth faster than the grinding wheel can cut; this in turn dubs the top of the tooth off instead of bringing it to a fine point. This is not too noticeable on large teeth such as 6 and 7 point, but, definitely wrong to use wheel in this condition on small teeth.



WHEEL DRESSER





When grinding wheel reaches bottom of throat and having ground face of tooth with bevel facing operator, feed pawl must be adjusted so that it starts feeding by pushing on face of tooth of same sequence - bevel facing operator.

Then while feed pawl is in motion the grinding wheel will grind up the back of tooth following the tooth just faced, the bevel of this tooth will face away from operator.

After completing these motions the grinding wheel will rise, then oscillate, the tooth feed pawl will recede and is ready to carry on the sharpening.

8 point teeth and larger should have the pawl spaced from grinding wheel as illustrated.

Smaller tooth saws should carry the feed pawl two teeth farther away from wheel than illustrated so as not to let pawl get in way of grinding wheel.

The follow pawl is adjustable entirely independent of the tooth feed pawl, and to learn proper adjustment, the saw should be sharpened within a few teeth from the point of saw, then throw the clutch out while grinding wheel is at bottom of throat, lower follow pawl into a throat and correlate until it is same as feed pawl, then raise follow pawl above teeth about $1/32$ inch, throw in clutch and as feed pawl drops over end of saw, follow pawl will automatically fall into place and carry the saw thru to complete grinding on the last few teeth.

After some practice, the follow pawl can be adjusted while machine is in motion, making it unnecessary to disengage clutch.

Be sure to always grind on all faces of teeth, or uneven teeth will result.

Be sure to set pawl in the above position, or uneven teeth height will result.

Ordinarily, no adjustment of tooth height equalizer is necessary when tooth feeding.

If teeth show high on one side, check set, check that grinding wheel touches all faces of teeth, or retoothe a saw by rack feed to see if heights are equal.

Make all adjustments for depth of cut, cut on face, at the first tooth.

Do not let follow pawl feed at the same time as feed pawl, its purpose is only for feeding the last few teeth thru when feed pawl drops over end of saw.